



Open Systems Joint Task Force

Generic MOSA Assessment In-Brief

**COL Ken Flowers, Director
Open Systems Joint Task Force (OSJTF)/
OUSD (AT&L), DS**

**(703) 602-0851x104, FAX 602-3560,
www.acq.osd.mil/osjtf**

Agenda

- Introductions
- MOSA Overview
- MOSA Assessment Process
- Proposed Assessment Schedule
- MOSA PART Demonstration
- MOSA PART Validation—*Expected feedback from PMO*
- Expected Results—*What the PMO should expect from this assessment*
- Discussion

Definition of Open System

A System That Employs Modular Design, Uses Widely Supported and Consensus Based Standards for its Key Interfaces, and Has Been Subjected to Successful Validation and Verification Tests to Ensure the Openness of its Key Interfaces.

Key Open System Characteristics:

- Based on Open, Publicly Available Specifications
 - Preferably Maintained as Standards by a Internationally Recognized Governing Groups
- Well-defined, Widely Used Non-Proprietary (Std) Interfaces, Services, Formats
- Durable (Stable or Slowly Evolving) Component Interfaces That Facilitate Component Replacement and Addition of New Capabilities
- Upgradeable Through Incorporation of Additional or More Capable Components With Minimal Impact on the System

Why We Care

- The world has changed
 - Operational demands are up
 - Investment and O&S accounts likely to remain at reduced levels
 - Pace of changes in industrial base is leaving DoD behind
- DoD can neither Equip, Train, Support, nor Fight in this new world without major advances in **Plug & Fight** capabilities
- Open Systems process is not a panacea, but enduring solutions are unlikely without it
- **We find no viable or practical alternative for delivering warfighter capabilities better, faster and cheaper**



A Real-World Open Systems Example



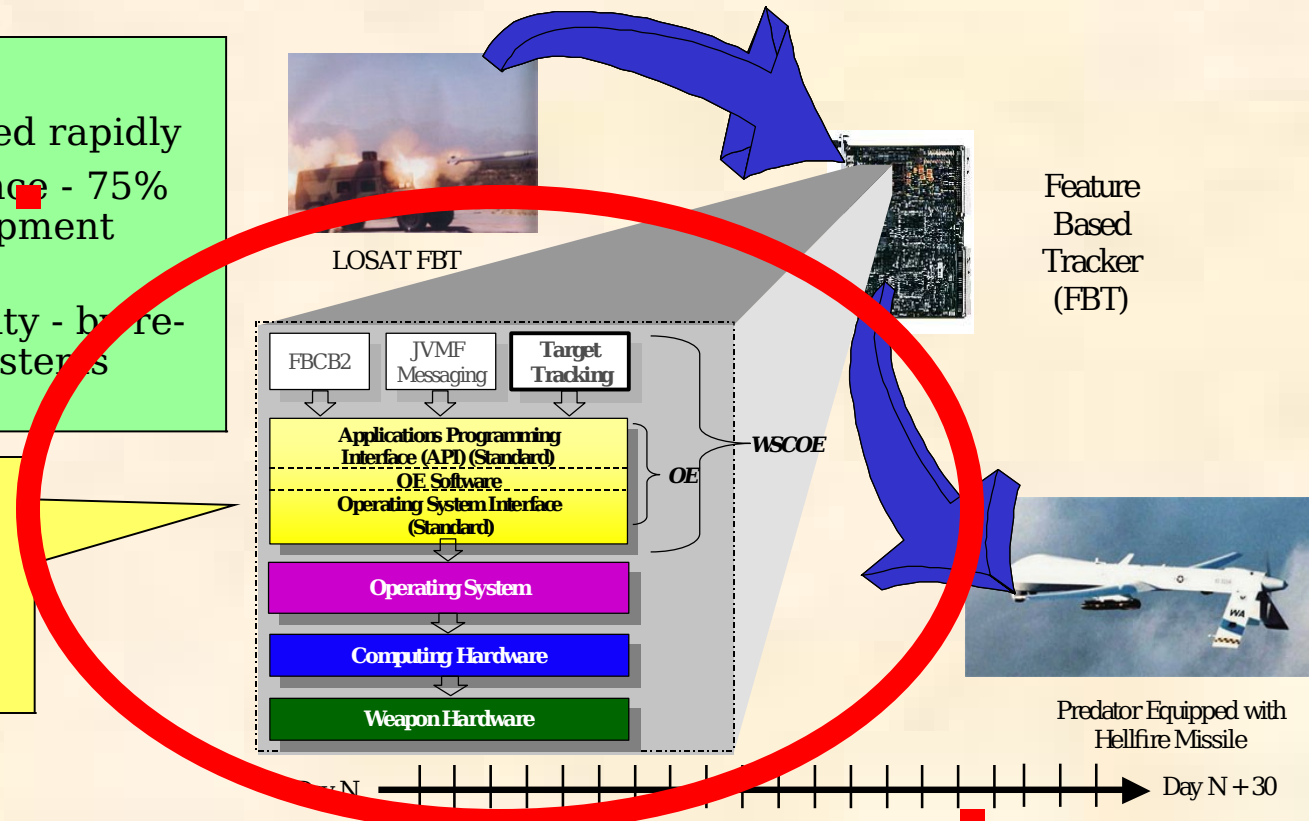
- What
 - Predator UAV was augmented with Hellfire missile in just over 30 days for rapid deployment in Afghanistan.
- How
 - Critical target tracking software was easily rehosted from LOSAT (Line of Sight Anti-Tank) computing environment to Predator's because it was built upon the Army's open Weapon System COE API.
 - The WSTAWG COE specifies common services for managing the 1553 bus and for handling digital video.

Resulted in:

- A New Capability - fielded rapidly
- Significant Cost Avoidance - 75% of typical software development costs
- Enhanced Interoperability - by re-using a proven weapon systems product

Enabled by MOSA using:

- Modular Design
- Key Interfaces
- Open Standards



MOSA Implementation Memo



THE UNDER SECRETARY OF DEFENSE

3010 DEFENSE PENTAGON
WASHINGTON, DC 20301-3010

APR 5 2004

MEMORANDUM FOR: SEE DISTRIBUTION

SUBJECT: Amplifying DoDD 5000.1 Guidance Regarding Modular Open Systems Approach (MOSA) Implementation

A key enabler in the Department's focus on joint architectures and evolutionary acquisition is a modular, open systems approach (MOSA) to systems acquisition. MOSA is an integrated business and technical strategy that employs a modular design and defines key interfaces using open standards. MOSA is based on a robust systems engineering approach as defined in my Policy for Systems Engineering in DoD, dated February 20, 2004. MOSA enables programs to: 1) design for affordable change; 2) employ evolutionary acquisition and; 3) identify key modules and interfaces of a system's architecture. The Department's intent is to use open architectures to rapidly field affordable systems that are interoperable in the joint battle space. A required step in this direction is to ensure each Service has a coordinated business and technical approach to MOSA across their respective programs that will ultimately support the progression towards joint integrated warfare.

The purpose of this memorandum is to amplify and expand the policy for implementation of MOSA as set forth in DoDD 5000.1, dated May 12, 2003. Paragraph E1.27 states that, "A modular, open systems approach shall be employed, where feasible." Commencing October 1, 2004, all programs subject to milestone review shall brief their program's MOSA implementation status to the Milestone Decision Authority (MDA) to determine compliance. Programs not complying with MOSA implementation guidelines shall provide justification or a migration plan to the MDA for achieving compliance. This policy will be included in the next revision of DoDI 5000.2.

The Open Systems Joint Task Force (OSJTf) is my lead for MOSA and has developed a Program Manager's Guide that provides principles and guidelines for implementing MOSA in new and current programs. In addition, OSJTf has adapted the Office of Management and Budget (OMB) Program Assessment and Rating Tool (PART) in assessing MOSA implementation. Each program will present the results of their PART assessment, using the results generated by the tool, at all major milestone and program reviews. The guide and the PART are available at http://www.acq.osd.mil/osjtf/html/mosa_assessment.html.

"The Department's intent is to use open architectures to rapidly field affordable systems that are interoperable in the joint battle space. A required step in this direction is to ensure each Service has a coordinated business and technical approach to MOSA across their respective programs that will ultimately support the progression towards joint integrated warfare."

"Commencing October 1, 2004, all programs subject to milestone review shall brief their program's MOSA implementation status to the Milestone Decision Authority (MDA) to determine compliance."

"...OSJTf has adapted the Office of Management and Budget (OMB) Program Assessment and Rating Tool (PART) in assessing MOSA implementation. Each program will present the results of their PART assessment, using the results generated by the tool, at all major milestone and program reviews."



printed

Dr. Lamartin's MOSA Implementation Instructions



OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON
WASHINGTON, DC 20301-3000

JUL 07 2004

MEMORANDUM FOR: SEE DISTRIBUTION

SUBJECT: Instructions for Modular Open Systems Approach (MOSA) Implementation

A Modular Open Systems Approach (MOSA) is a means to assess and implement, when feasible, widely supported commercial interface standards in developing systems using modular design concepts. It is an integral part of the toolset that will help DoD achieve its goal of providing the joint combat capabilities required in the 21st century, including supporting and evolving these capabilities over their total life-cycle. The USD(AT&L) memorandum, dated April 5, 2004 states: "commencing 1 Oct 04 all programs subject to milestone review shall brief their program's MOSA implementation status to the Milestone Decision Authority (MDA) for compliance." The purpose of this memorandum is to describe how this requirement will be addressed for systems and systems-of-systems in the formal acquisition process.

Given the enabling relationship of a modular open systems approach to evolutionary acquisition, DoD acquisition programs should address Modular Open Systems Approach (MOSA) early in their program and acquisition planning, and should discuss MOSA implementation in the context of their overall Acquisition Strategy and to the extent feasible in the Technology Development Strategy. MOSA implementation issues should be identified and addressed via the IPT process and presented as issues to the MDA only when unresolved at a lower level.

The Open Systems Joint Task Force (OSJTf) is my lead for MOSA and has developed the Program Assessment and Rating Tool (PART) for your use in conducting your internal MOSA implementation assessments. Program Managers should either use the PART, or an equivalent method of assessment, to generate objective data on the success of their MOSA implementation. The OSJTf Program Managers MOSA guide and PART are available at http://www.acq.osd.mil/osjtf/html/mosa_assessment.html. Additionally, pertinent MOSA and PART information will be provided in the next update to the DoD Acquisition Guidebook.

Purpose..... To describe how this requirement will be addressed for systems and SoS in the formal acquisition process

MOSA implementation issues should be identified and addressed via the IPT process and presented as issues to the MDA only when unresolved at a lower level.

Program Managers should use either the PART or an equivalent method of assessment to generate objective data on the success of their MOSA implementation.



printed

Policy Supporting Department Visions



*"... we are moving from a framework that **focuses in the past on known threats**, to a more flexible framework based on capabilities to defend ourselves from shifting and uncertain threats ... from a focus simply on programs and platforms, to a focus on results ... **from segmented information and closed information architecture, to network information and open architectures ... and from what is called "deliberate planning" ... to ... "adaptive planning."***

Source: DepSecDef Keynote on

Transformation

to The Heritage Foundation, 27 Feb

2004

"The OSJTF's modular, open systems approach is a key enabler in the Department's focus on joint architectures and evolutionary approach to weapon

printed

Modular Open Systems Approach (MOSA)

Vision

MOSA is an integral part of all acquisition strategies to achieve affordable, evolutionary, and joint combat capability

Principles

Establish Enabling Environment

Employ Modular Design

Designate Key Interfaces

Select Open Standards

Certify Conformance

Benefits

- ✓ Ease of Change
- ✓ Reduced Total Ownership Cost
- ✓ Reduced Cycle-Time
- ✓ Enabling Joint Integrated Architectures and Interoperability
- ✓ Risk Mitigation

Business

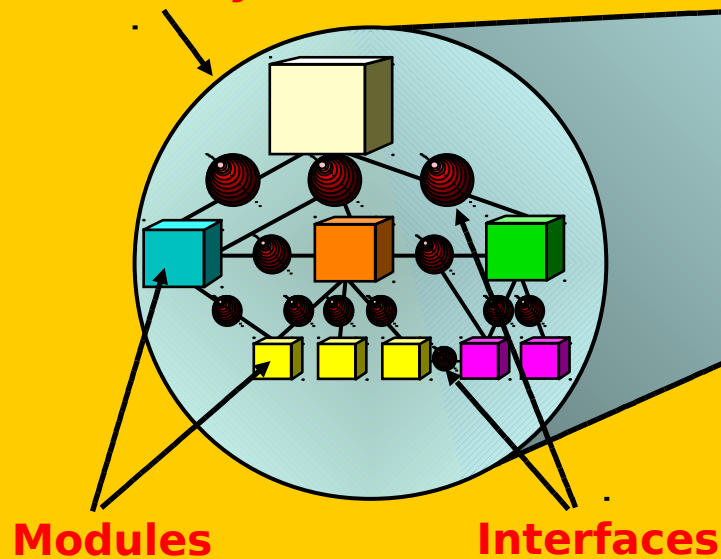
Technical

Indicators

Applying MOSA to the Joint Fight

Weapon System Focus

Boundary

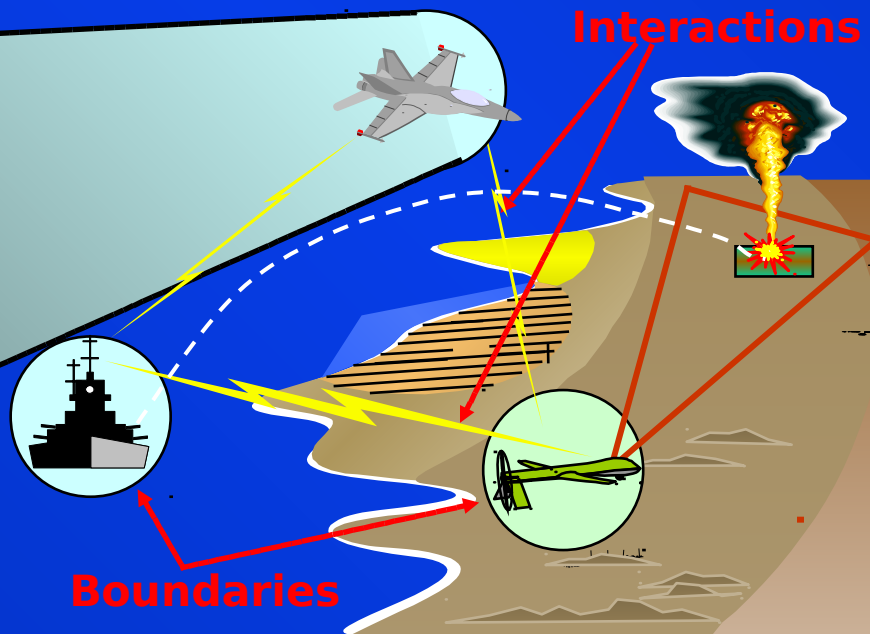


Modules

Interfaces

System-of-Systems Focus *Joint Warfare Integration*

Interactions



Boundaries

Plug

&

Fight

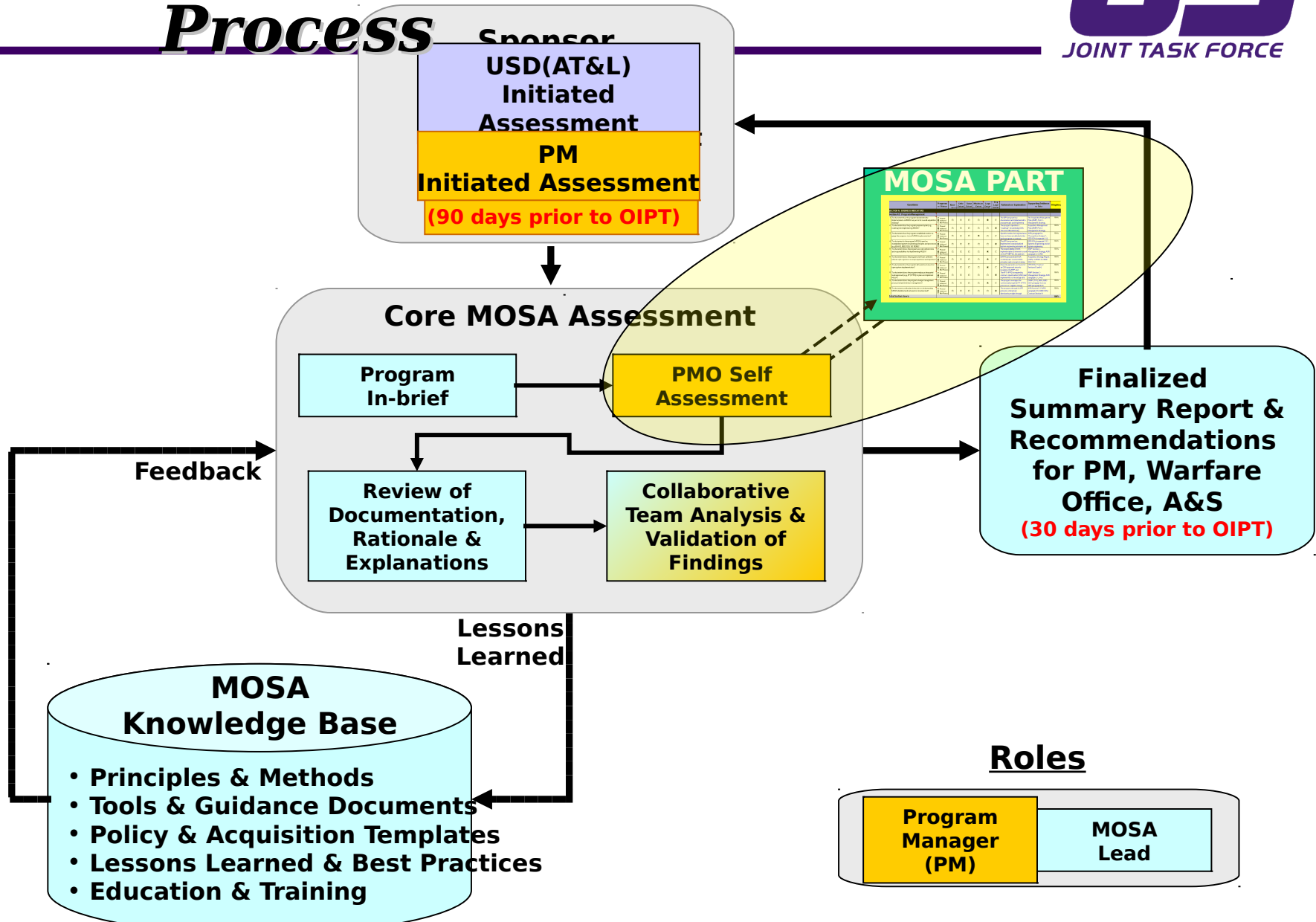
"I expect the Task Force to play an important role in achieving joint architectures by applying a modular, open systems approach at the system-of-systems level."

Source: PDUSD(AT&L) Memo of December 18, 2002

Subject: Extension of the OSJTF

printed

MOSA Assessment Process



Notional MOSA Assessment Process



(Dependent on A&S schedule)

Assessment Methodology - Required or Requested

(NOTE: Service initiated MOSA Assessments will be scheduled/implemented at the discretion of MDA)

1. **90 days** prior to OIPT/DAB, OSD Warfare Office or OSJTF will contact PMO and schedule In-brief
 - a. OSJTF requests program documentation
 - b. OSJTF provides access to MOSA Program Assessment and Review Tool (PART) and OSJTF Portal
2. Program conducts self-assessment
3. OSJTF reviews question responses / explanations / evidence
4. OSJTF interviews PMO staff to address areas of concern
5. OSJTF and PMO reconcile differences
6. OSJTF computes total score and prepares summary report and recommendations
7. ***30 days** prior to OIPT/DAB, OSJTF provides finalized summary report and recommendations to PM / Warfare Office / A&S
 - *Issues that have not been resolved at lower IPT levels will be briefed to the MDA for consideration and further actions.

printed

Proposed MOSA Assessment Schedule



EVENT	SUSPENSE DATE(S)	PRIMARY LOCATION/METHOD	RESPONSIBLE PARTY
<ul style="list-style-type: none"> Assessment Preparation <ul style="list-style-type: none"> Initial telecom/contact PM Schedule In-briefing Provide PM w/ Pre In-brief package (Includes Request for Documentation, Access to OSJTF Portal, and MOSA PART) 			OSJTF Assessment Team Leader
<ul style="list-style-type: none"> Initial Meeting <ul style="list-style-type: none"> In-briefing 			OSJTF Team Leader & Assessment Team
<ul style="list-style-type: none"> Provide MOSA PART self-assessment results; rationale/ explanations; and comments/feedback on the too Provide Requested Documentation 		OSJTF Portal https://portal.acq.osd.mil/portal/server.pt	PMO
<ul style="list-style-type: none"> Analyze results and adjudicate comments Conduct team Meeting(s) 			OSJTF Team Leader & Assessment Team
<ul style="list-style-type: none"> Out-brief / Final Report to PM / Warfare Office / VCS 			OSJTF Team Leader & Assessment Team

printed

MOSA PART Demonstration

MOSA Assessment



Questions?



printed